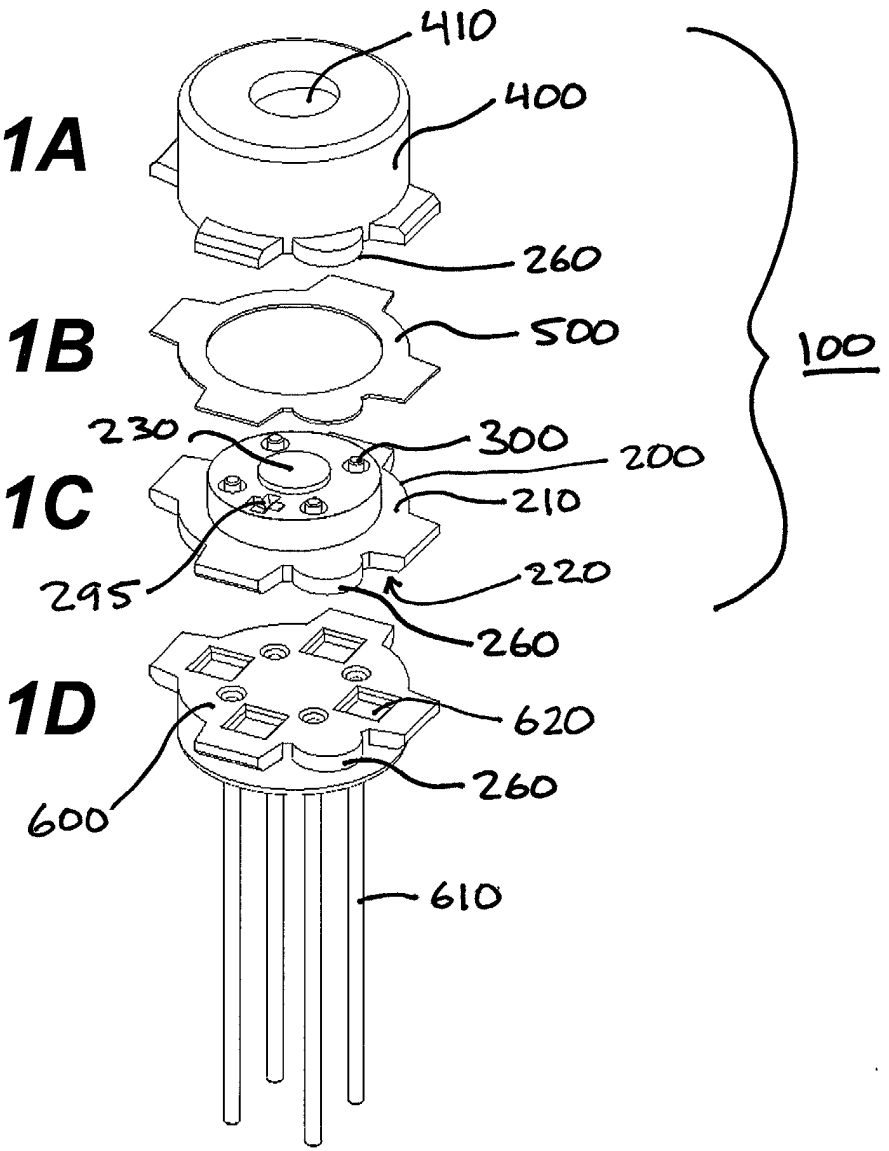
Fig. 1A

Fig. 1B

Fig. 1C

Fig. 1D



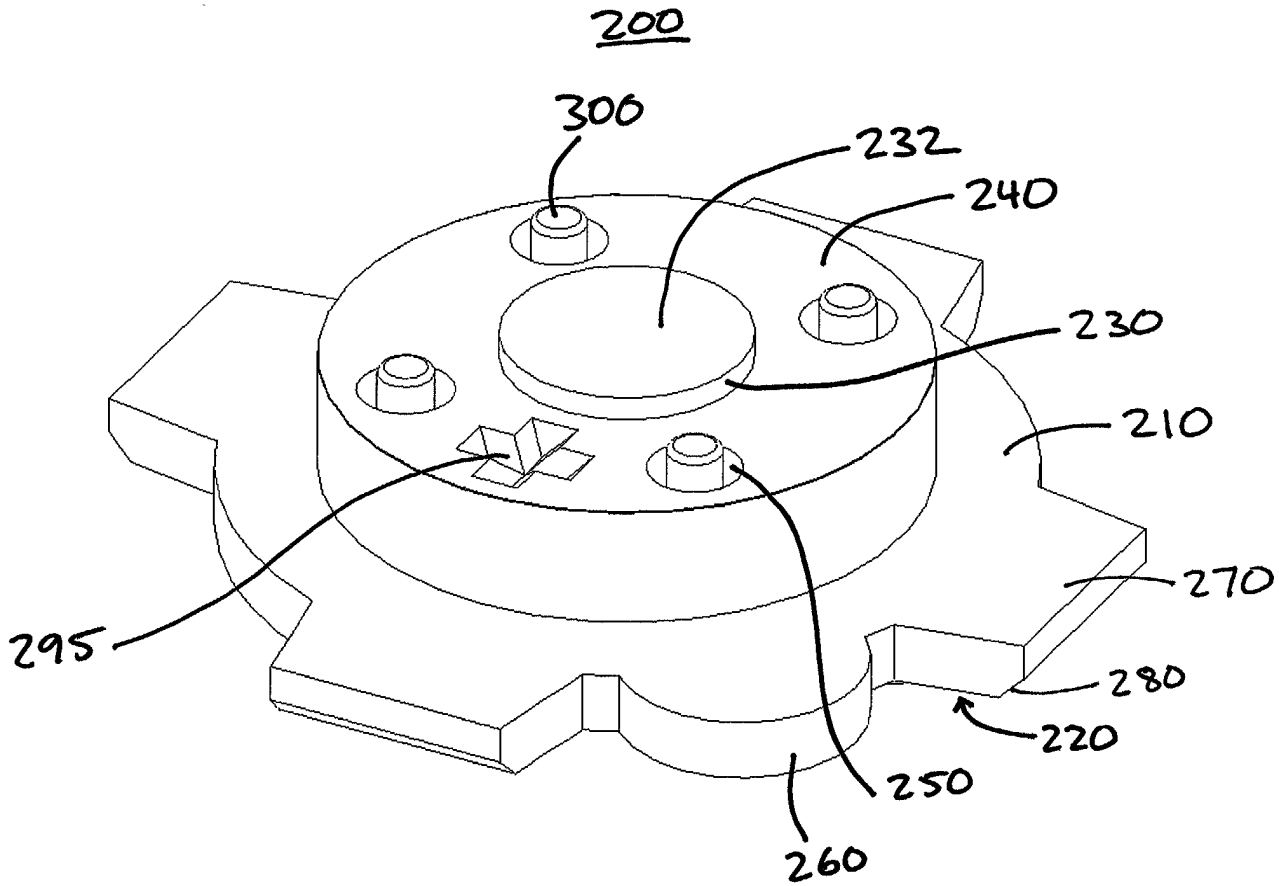
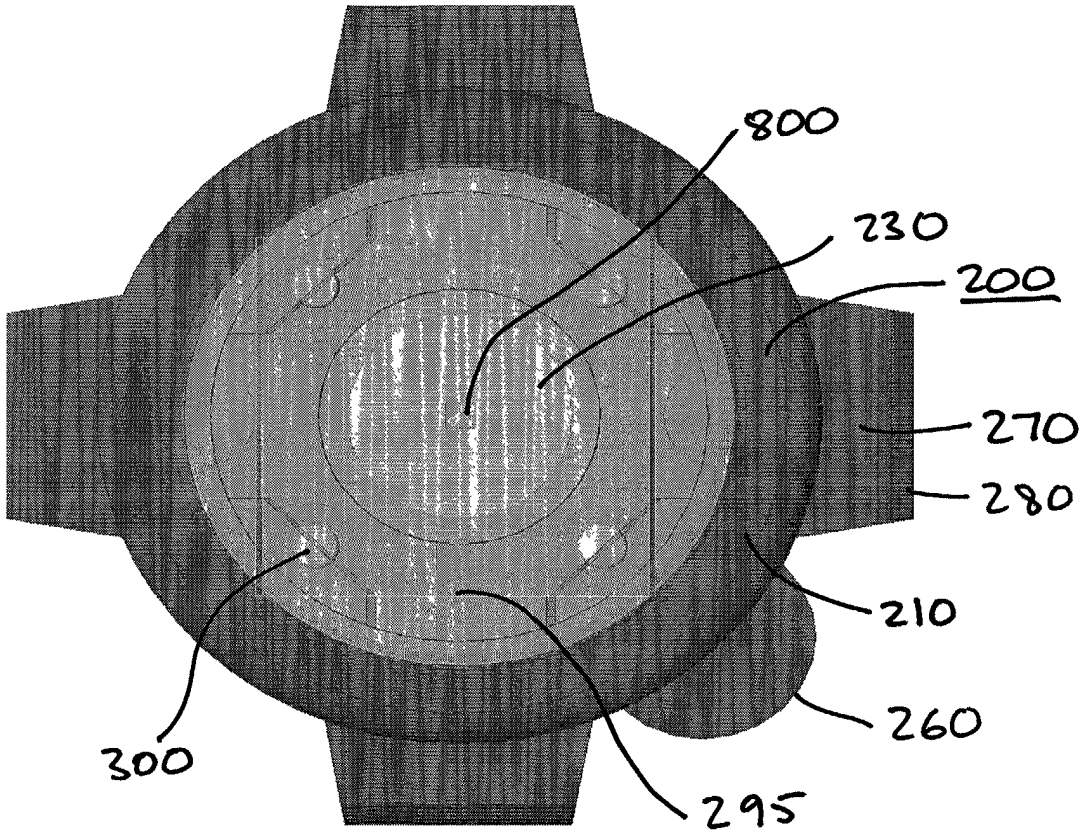


Fig. 2



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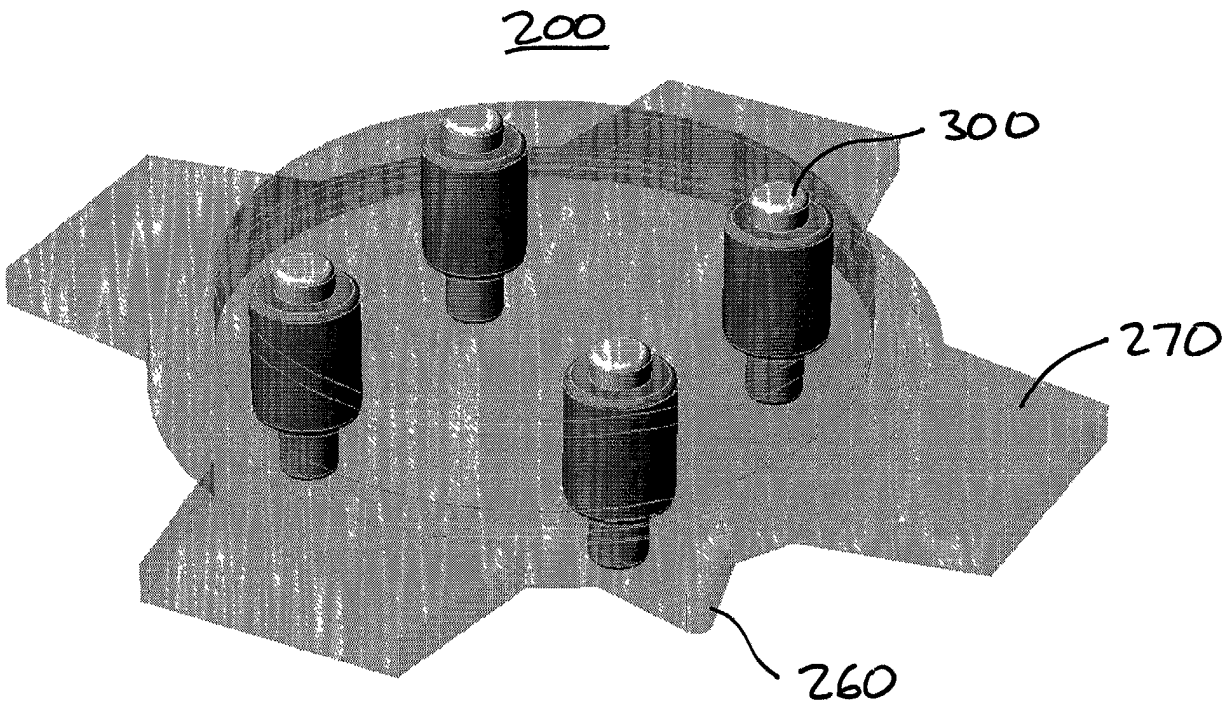

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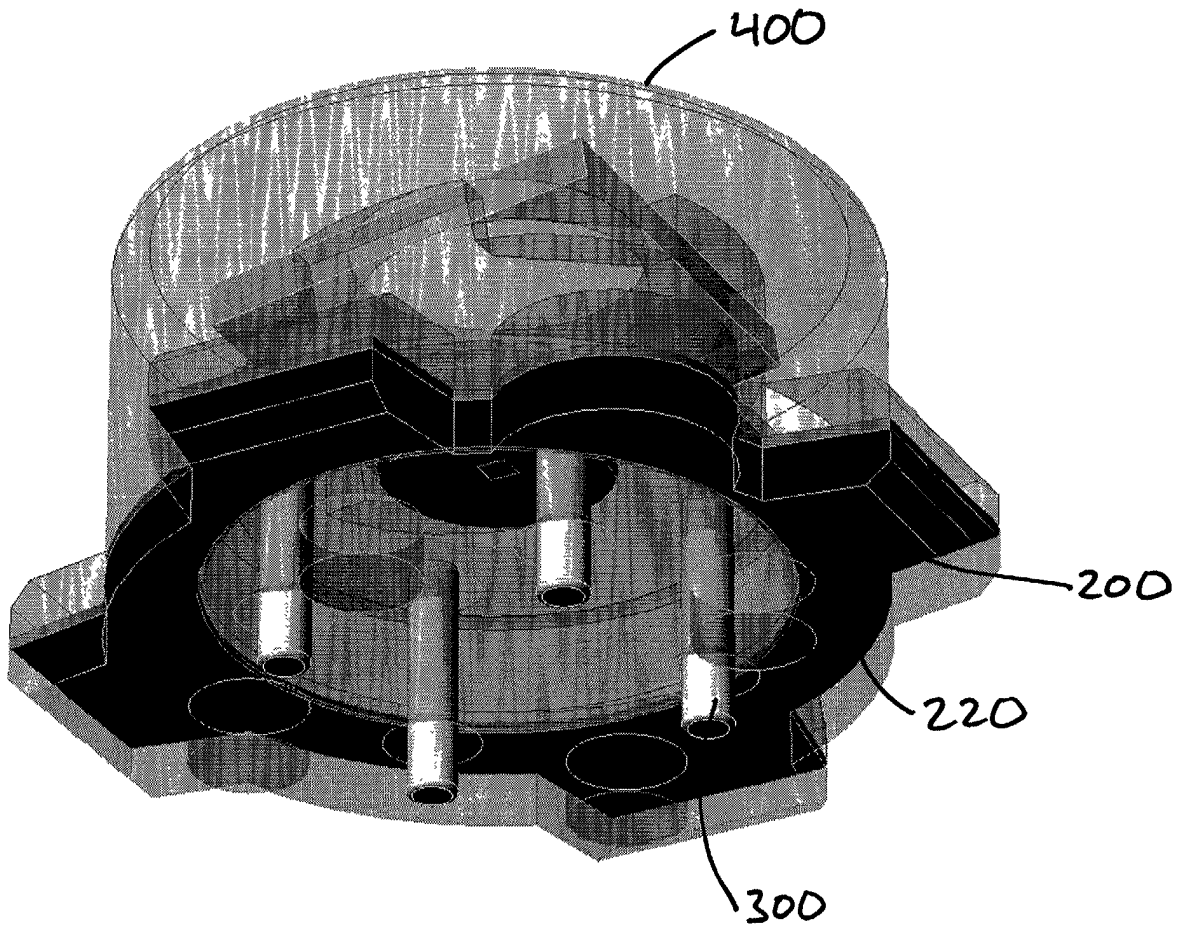

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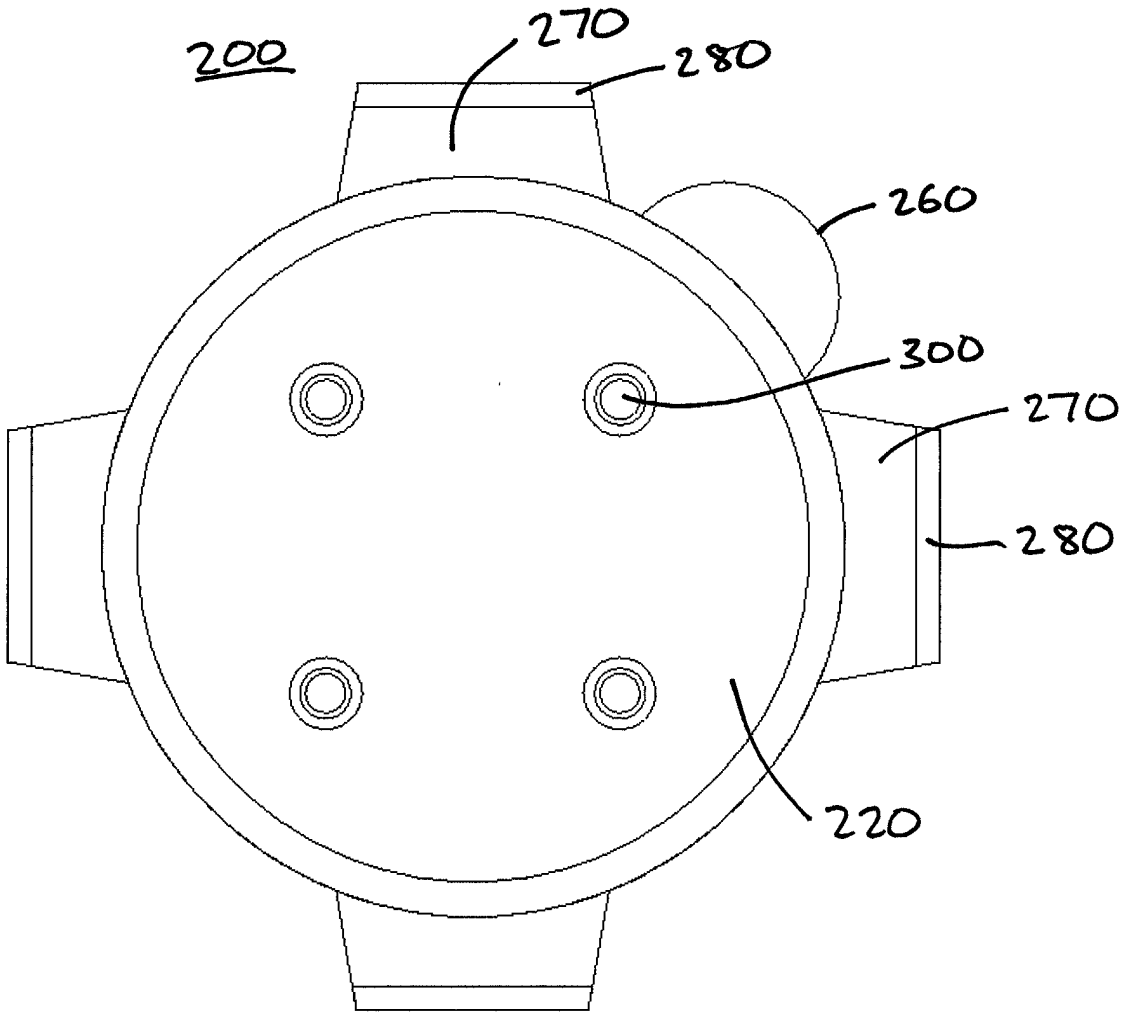

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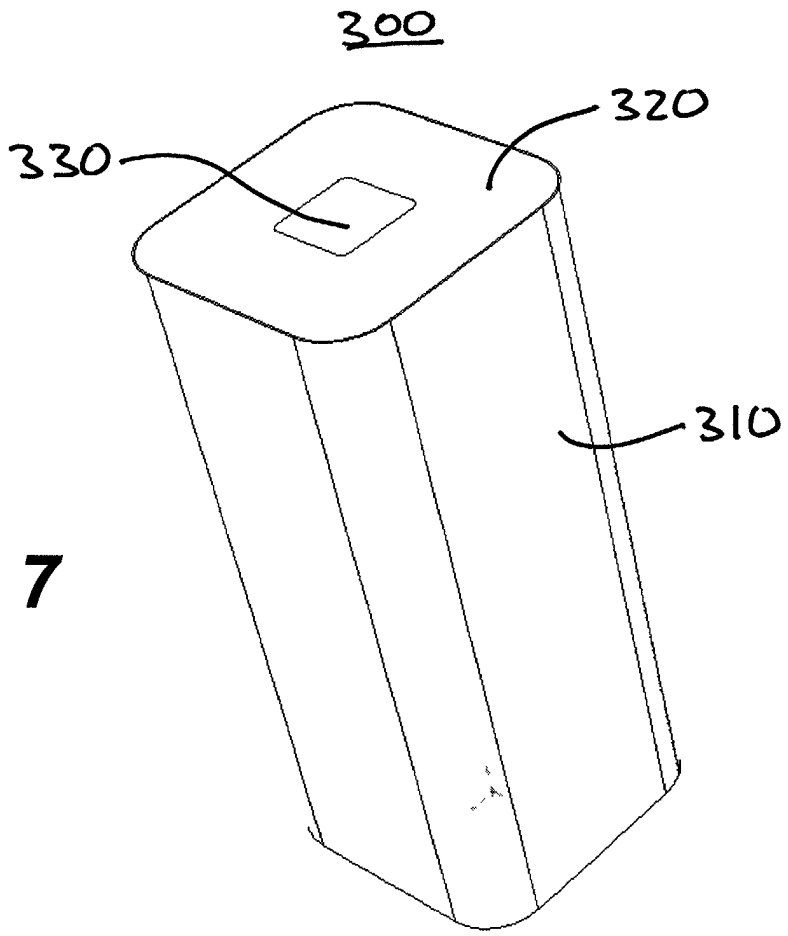

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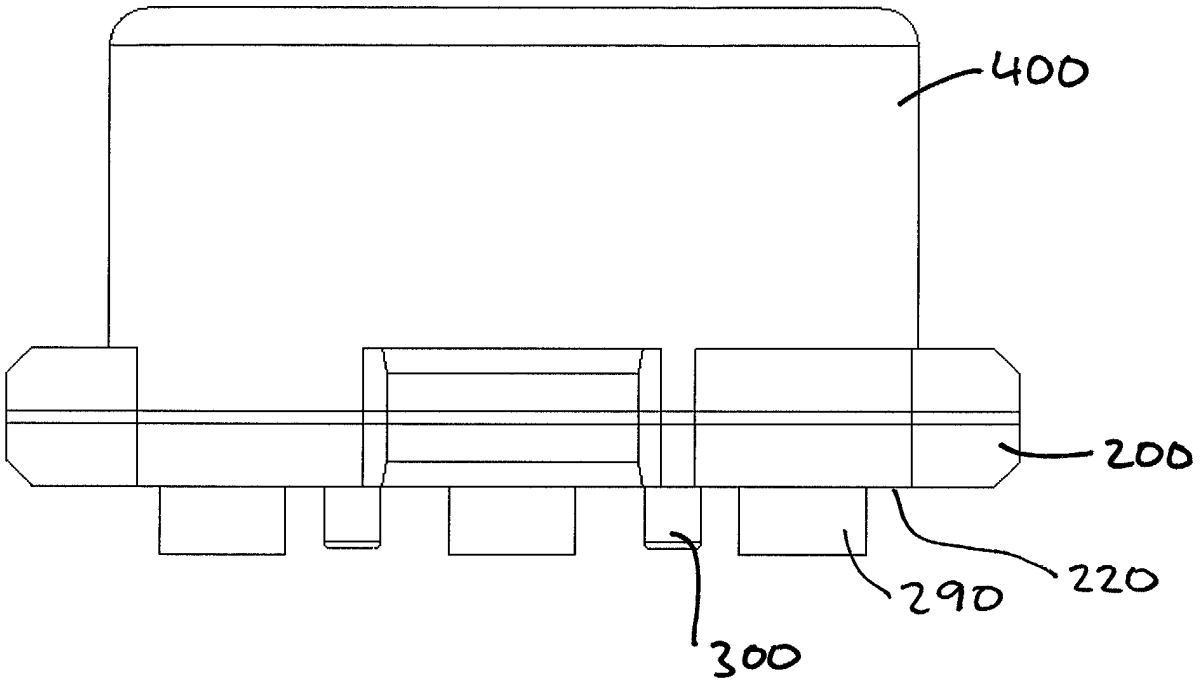
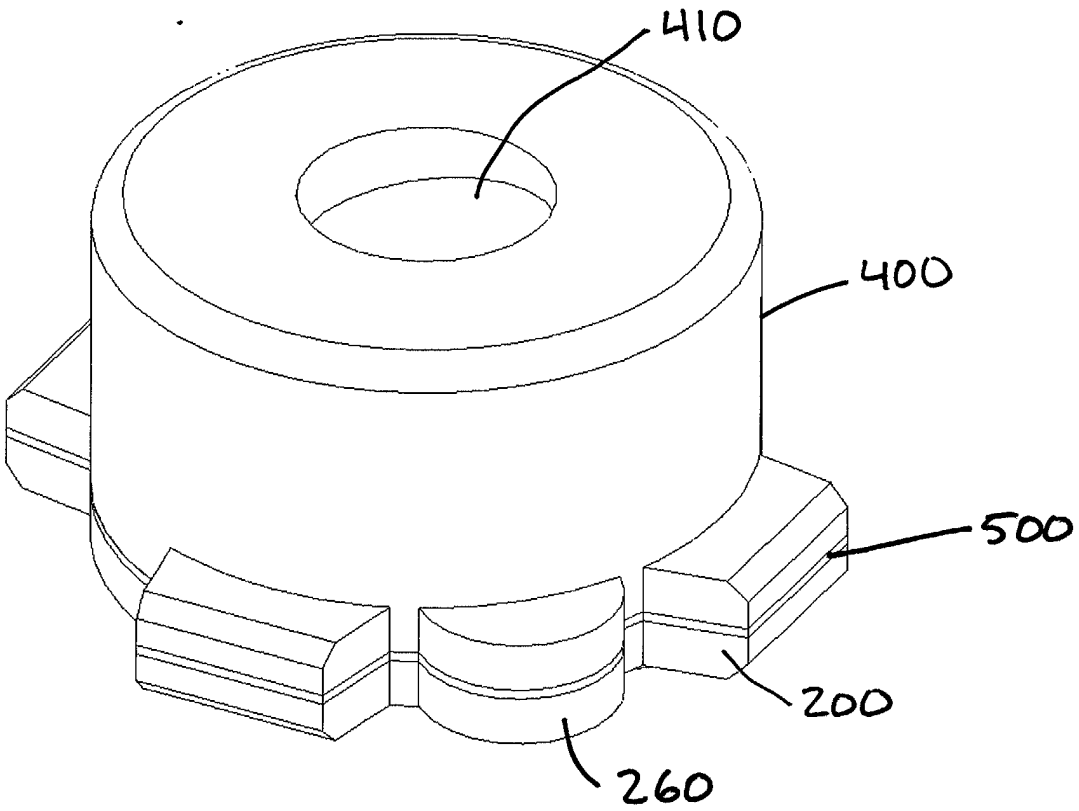


Fig. 8



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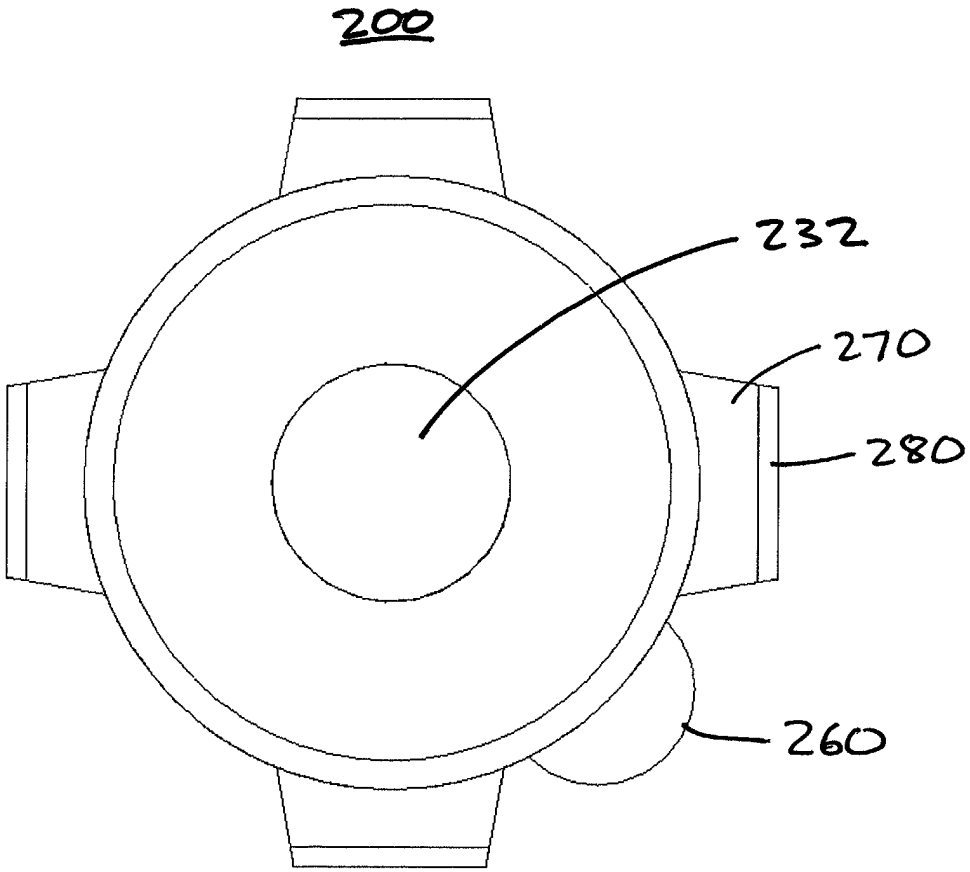


Fig. 10

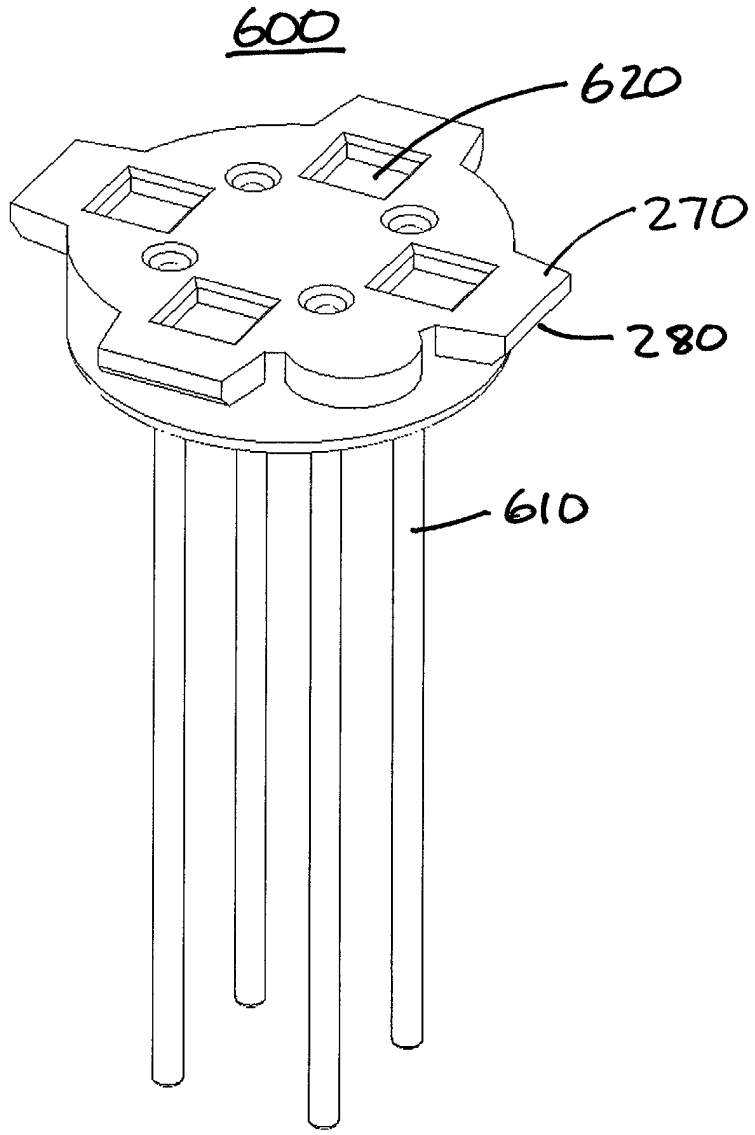


Fig. 11

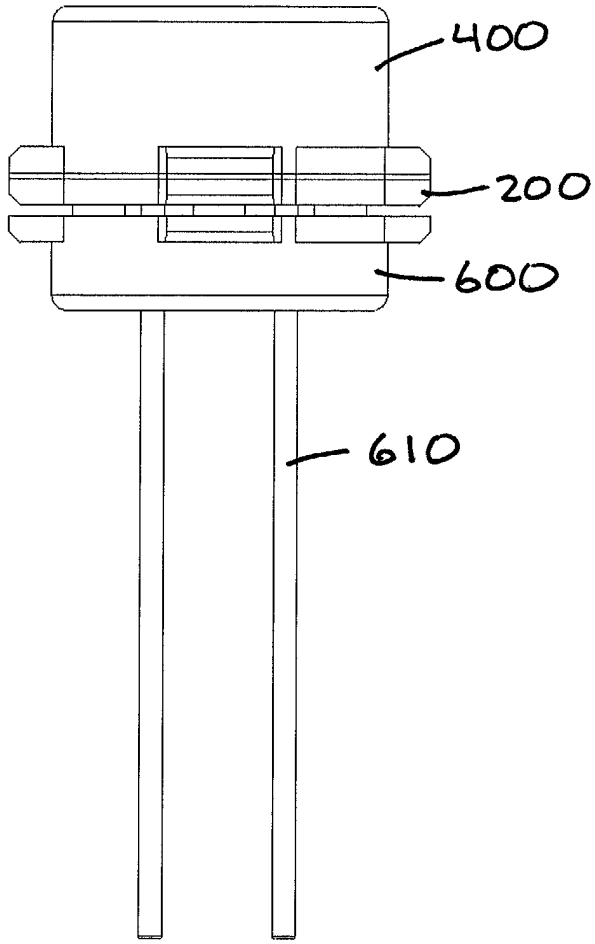


Fig. 12

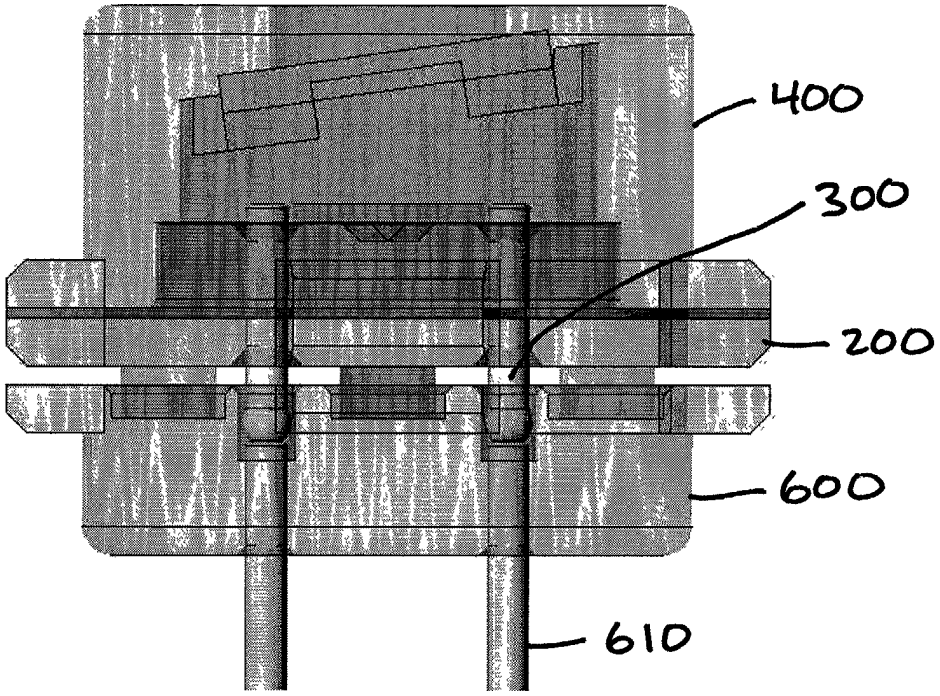


Fig. 13

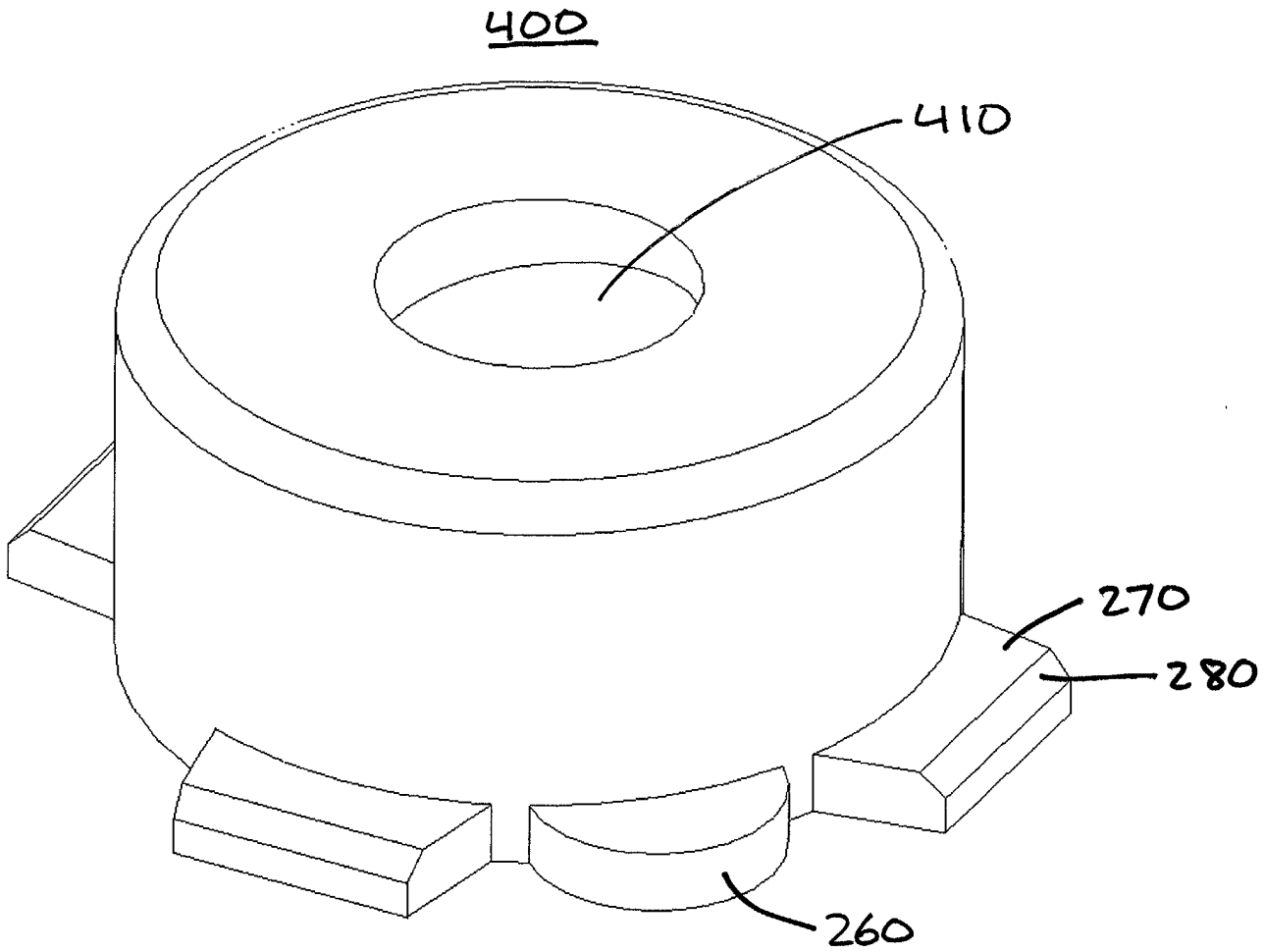


Fig. 14

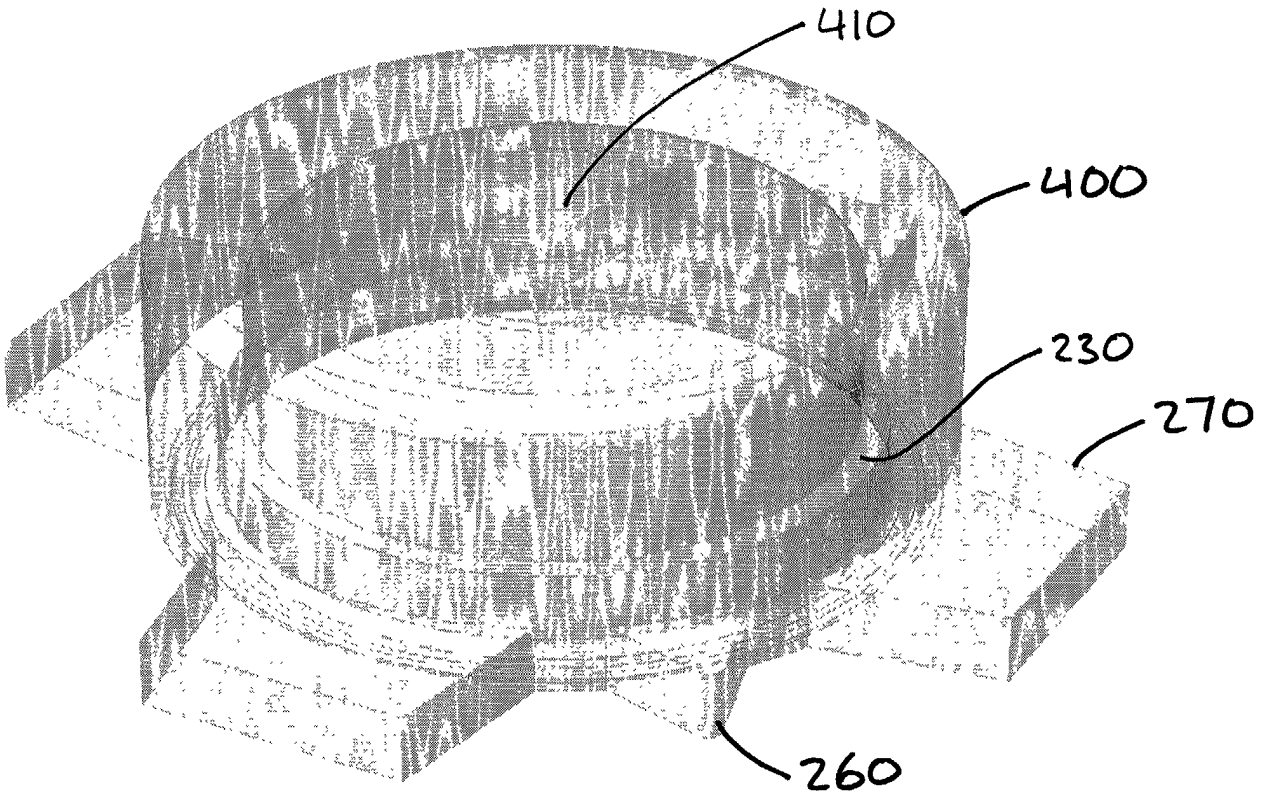


Fig. 15

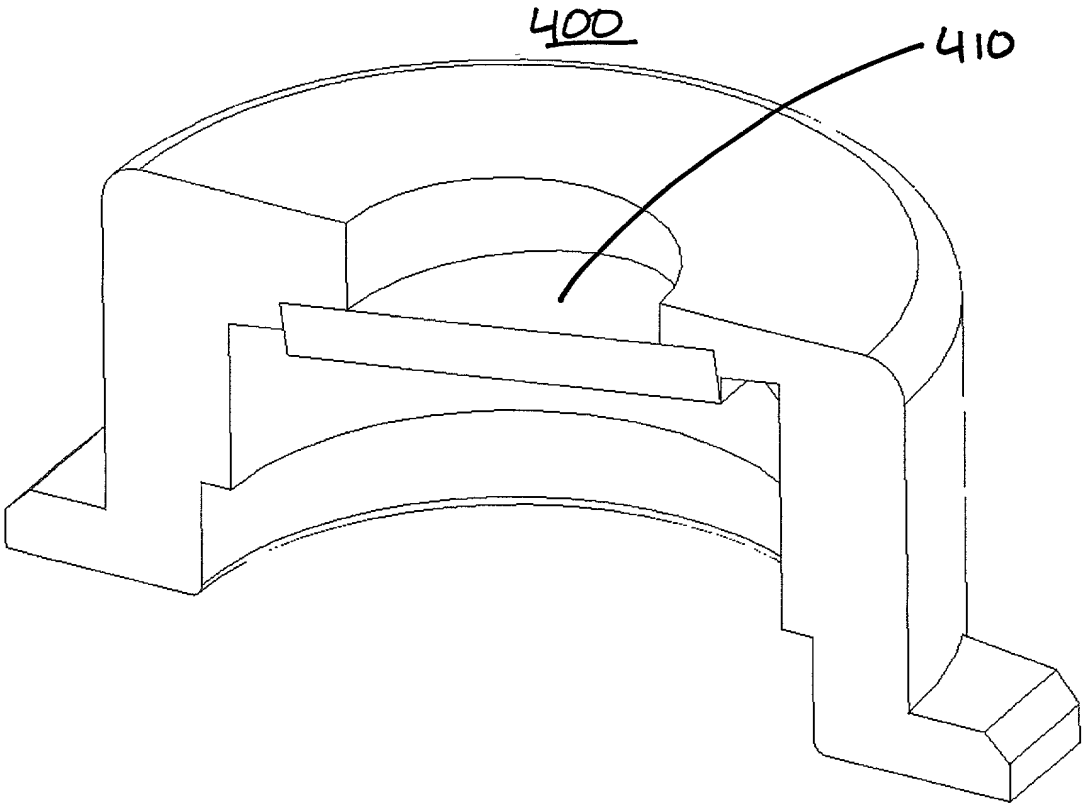


Fig. 16

Flat Window Example: Final dimension: 3.5X3.5X0.4mm

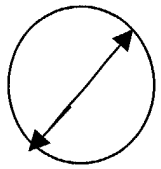


Fig. 17A

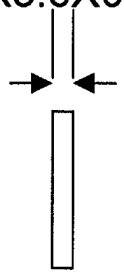


Fig. 17B

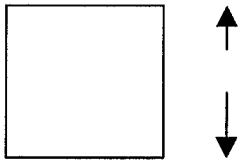


Fig. 17C

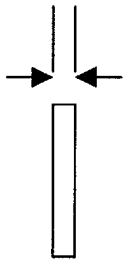


Fig. 17D

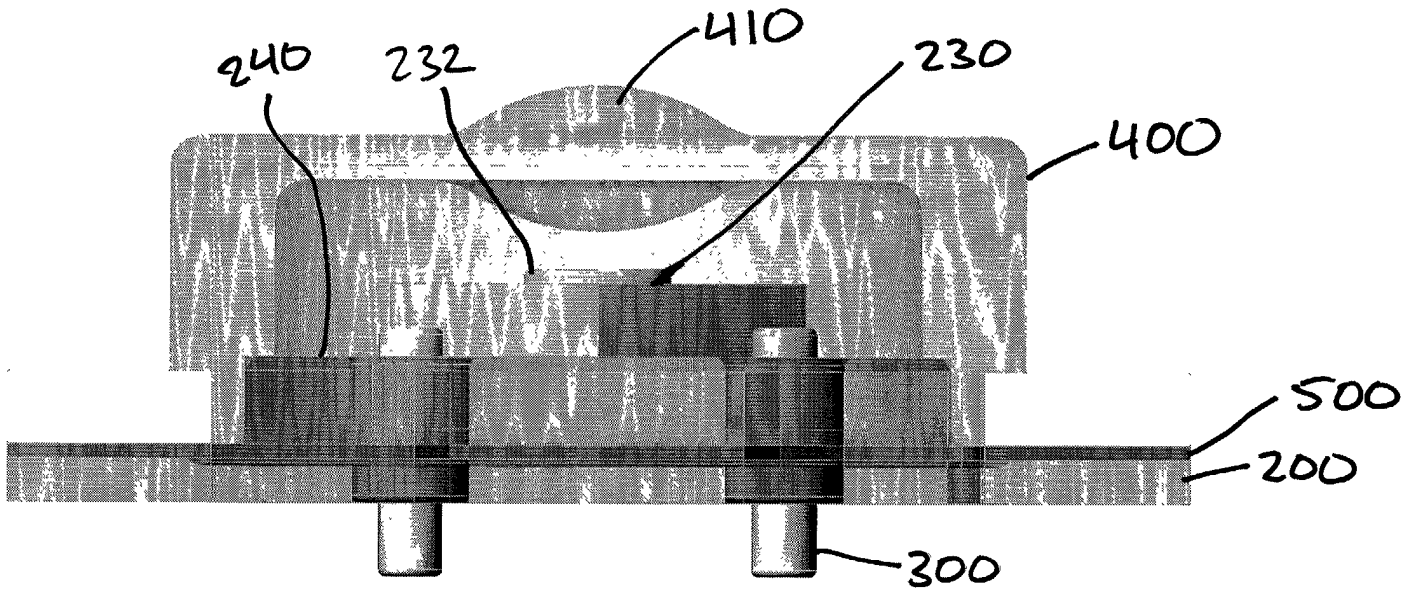


Fig. 18

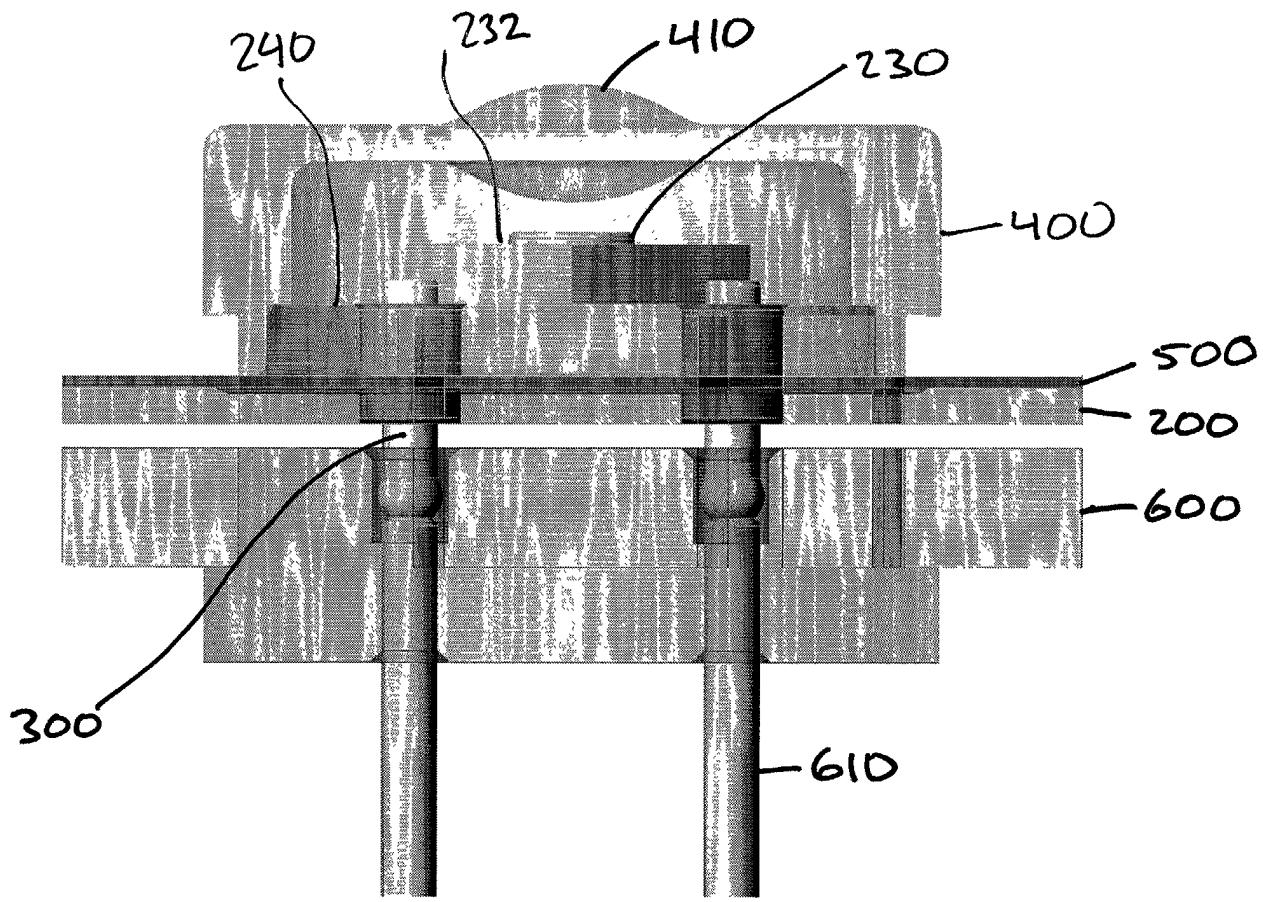


Fig. 19

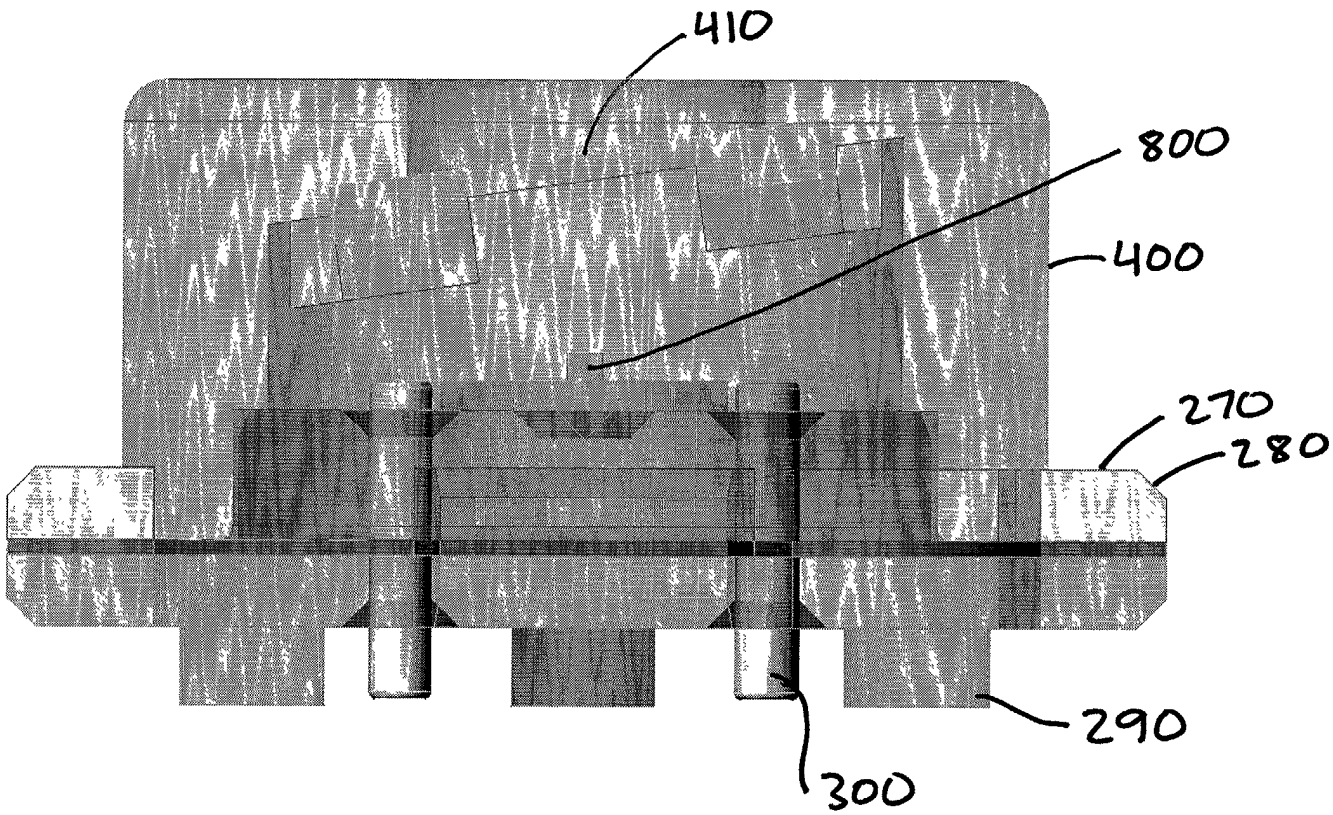


Fig. 20

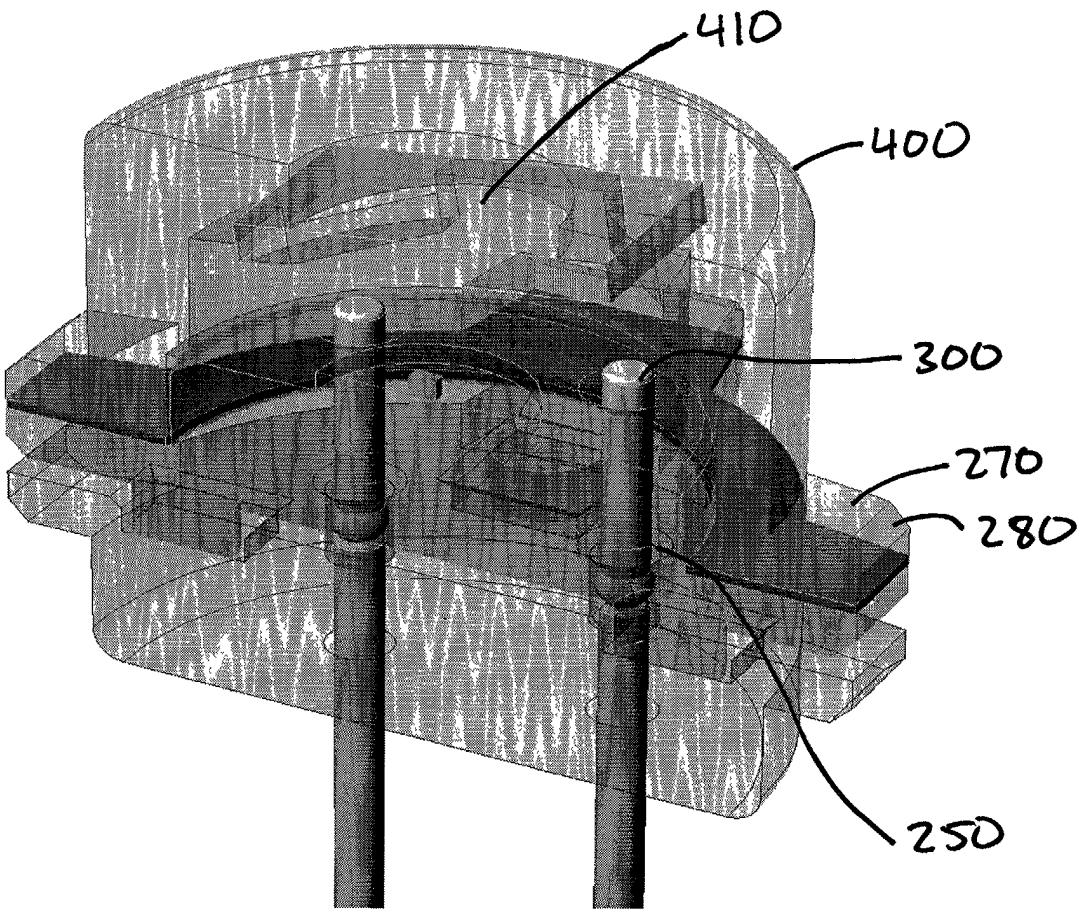
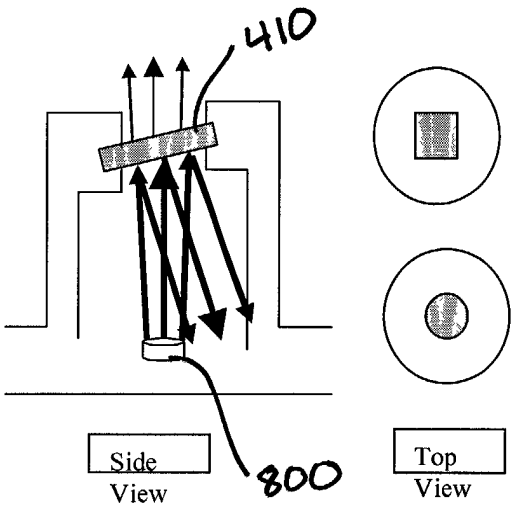
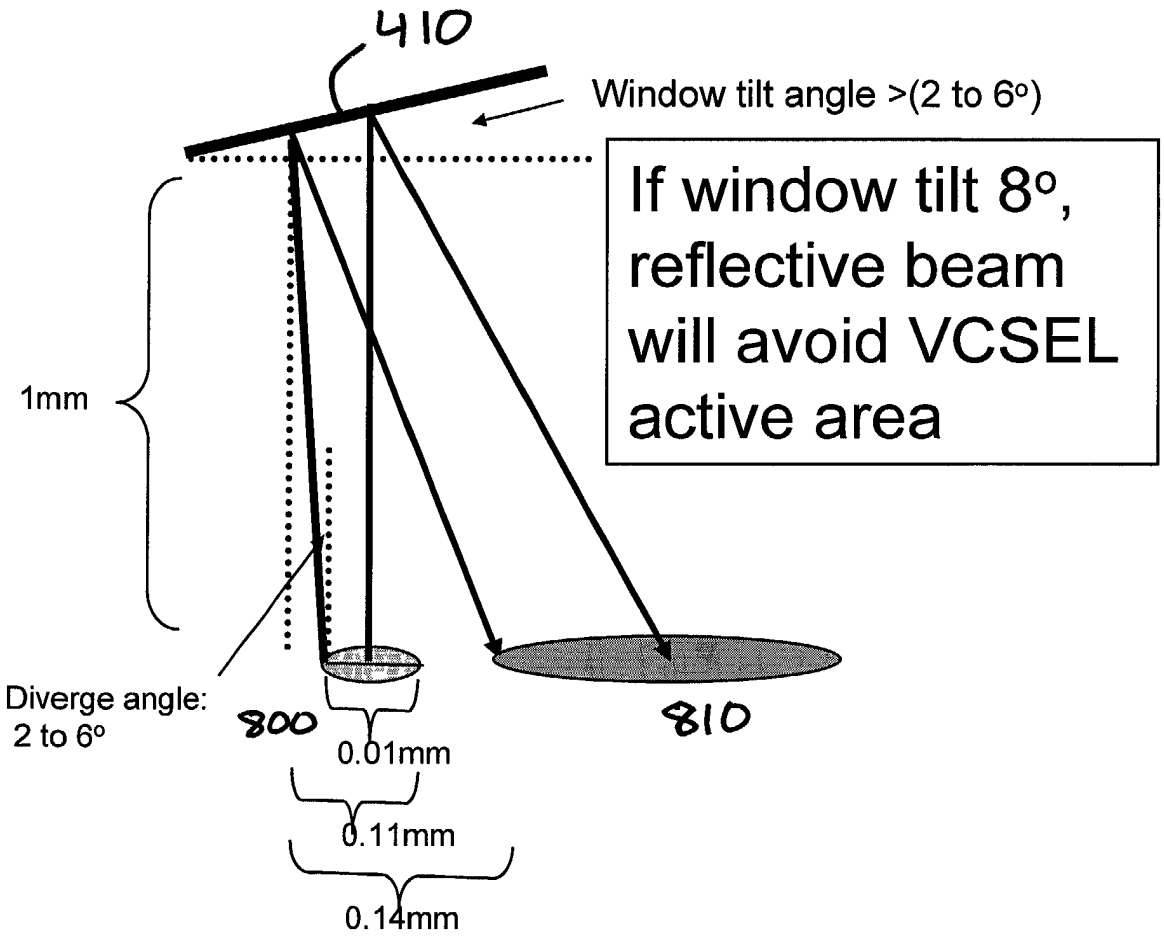


Fig. 21

Fig. 22


410
Side
View
800
Top
View


410
Window tilt angle >(2 to 6°)
If window tilt 8°, reflective beam will avoid VCSEL active area
1mm
Diverge angle:
2 to 6°
800
0.01mm
0.11mm
0.14mm
810

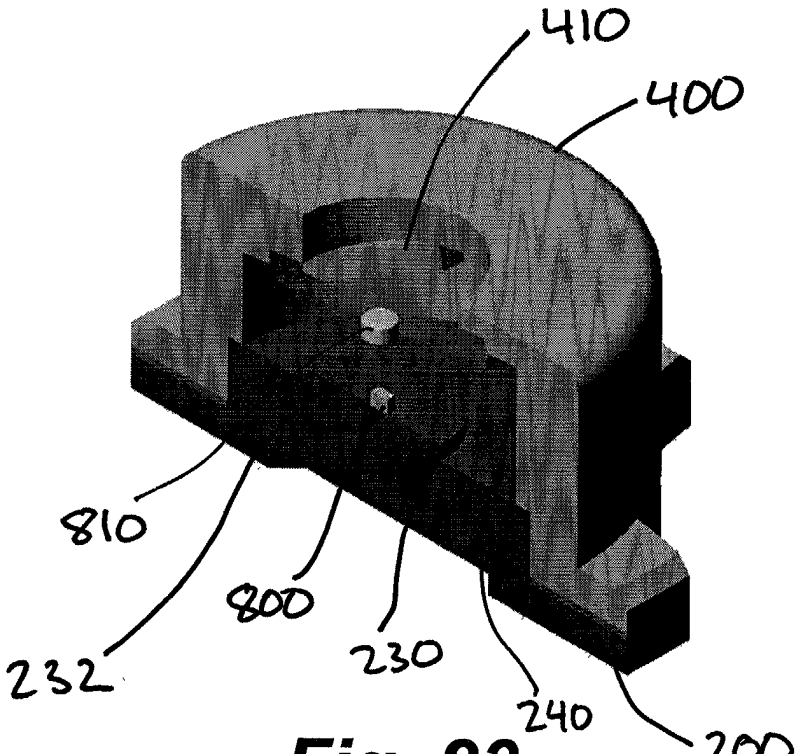
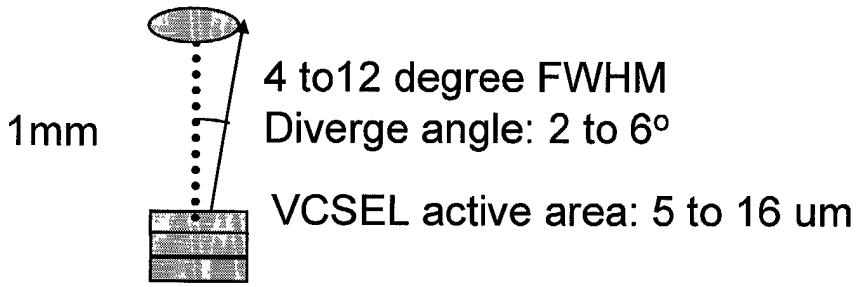


Fig. 23

Flat Window Analysis Example

Maximum: The diameter of the cap is: 4.5 to 4.9mm

Minimum: Cone diameter of light from VCSEL is: ~0.6mm



In this example, flat glass size may be:
1 ~ 4 mm in diameter, 0.3 ~ 0.65mm in thickness.

Fig. 24

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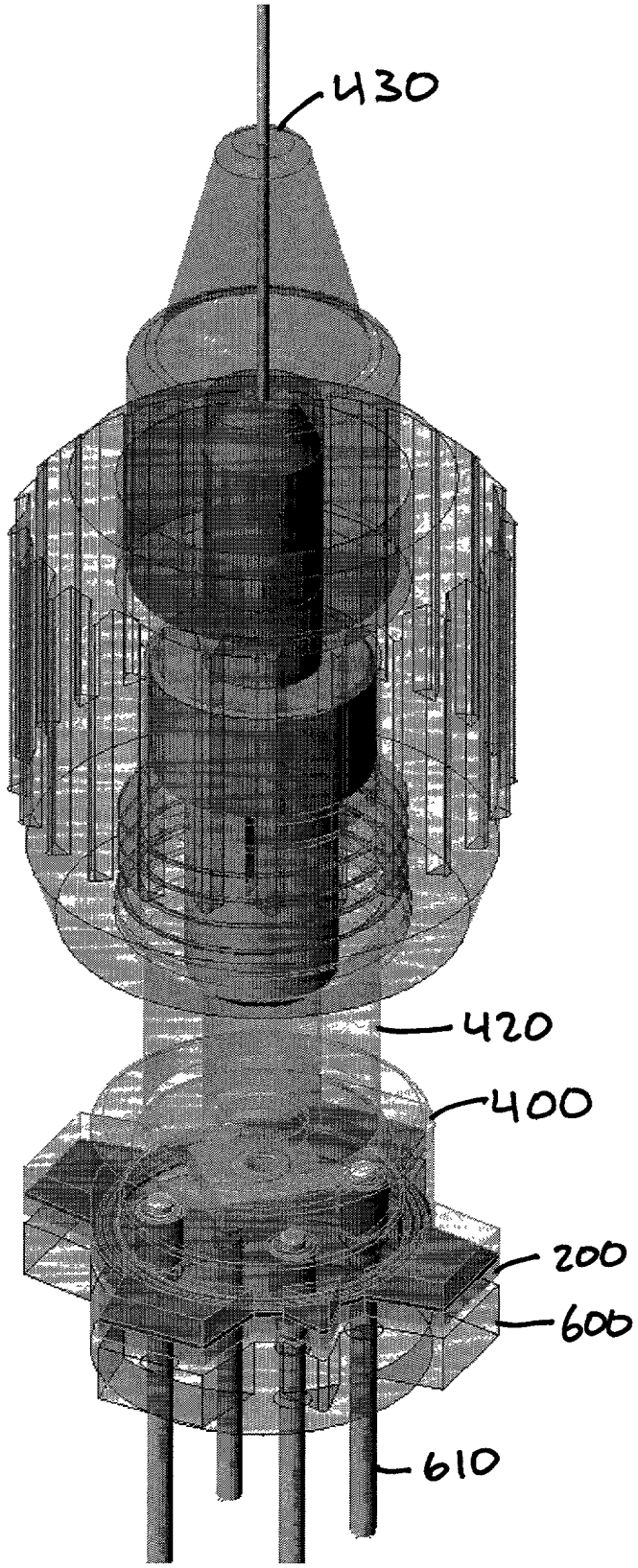


Fig. 25

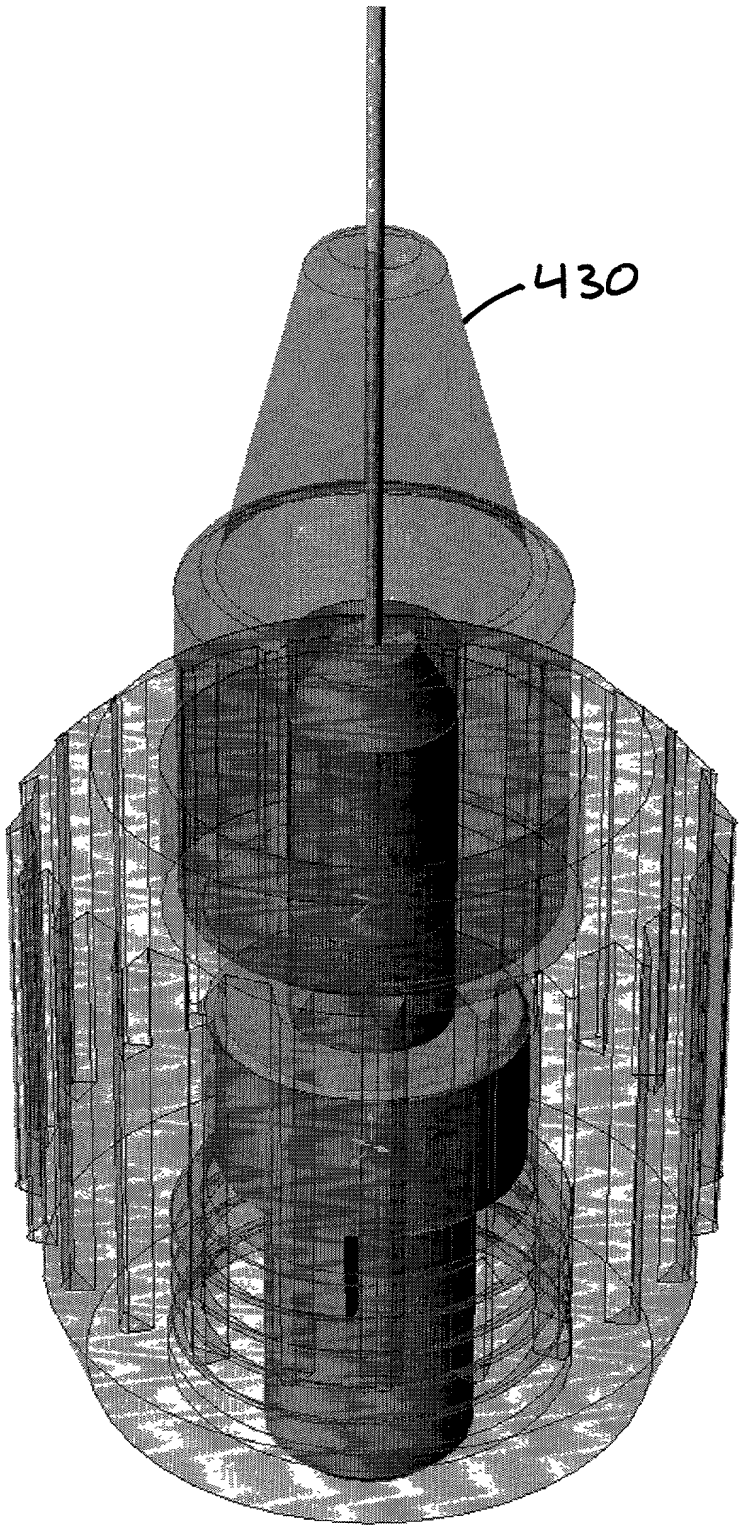


Fig. 26

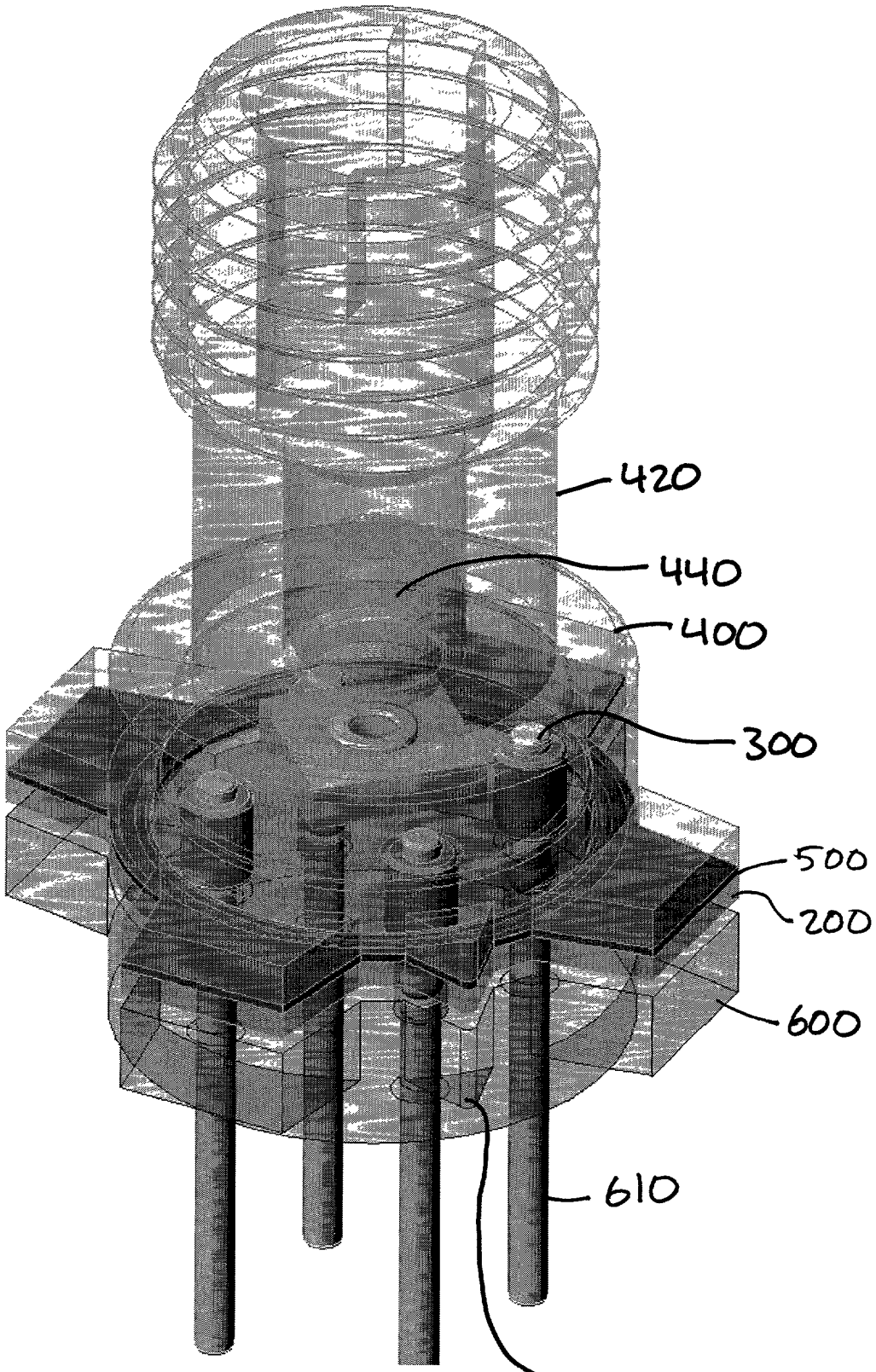


Fig. 27

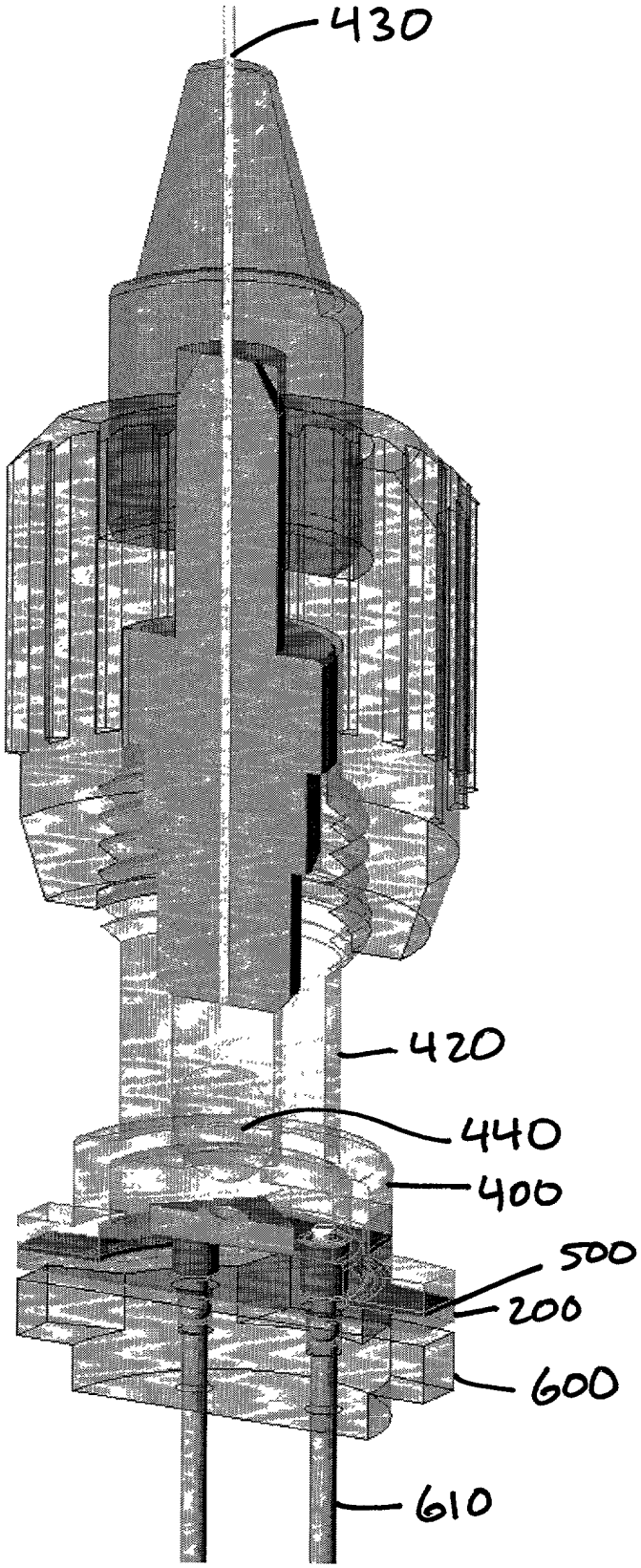
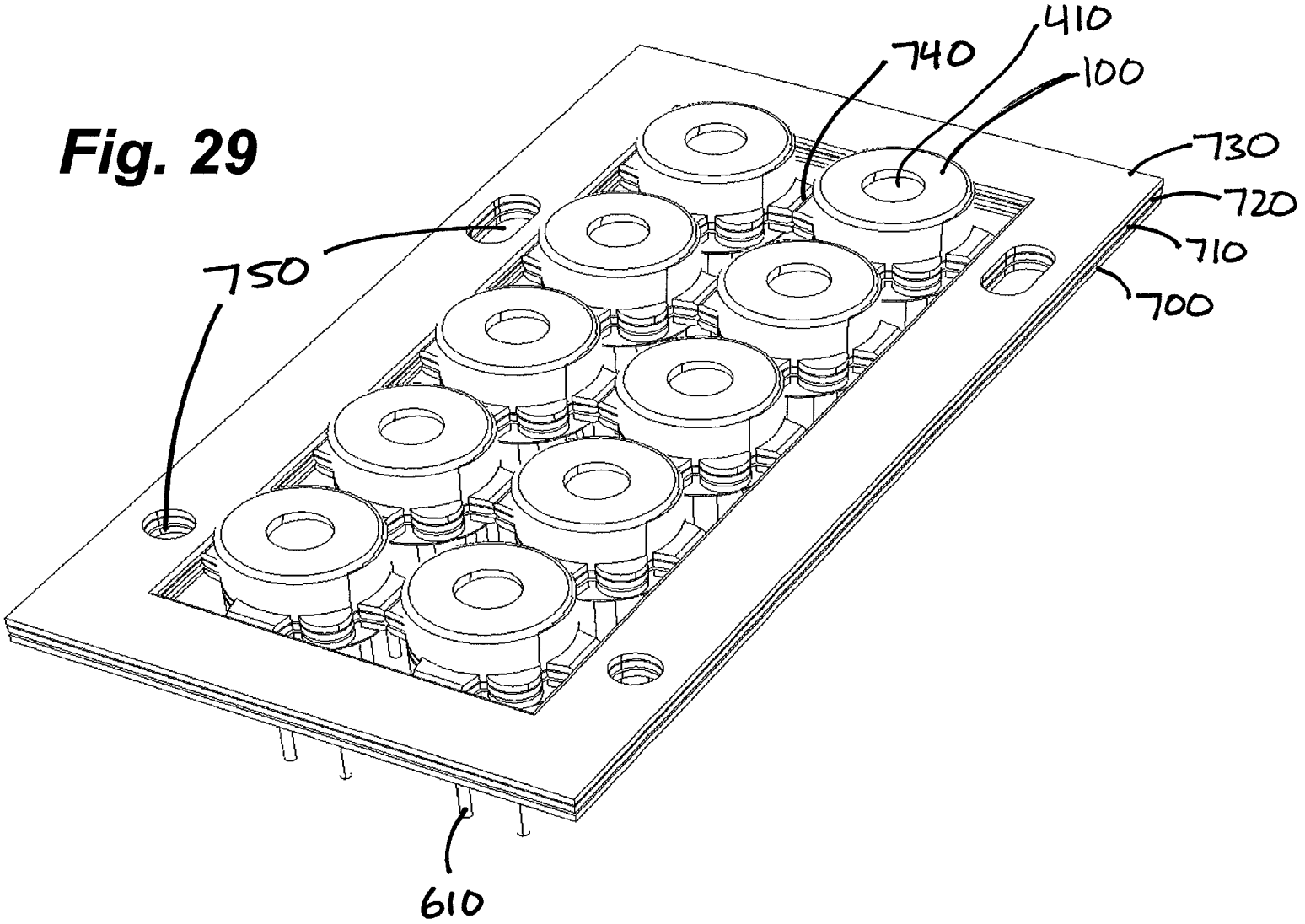


Fig. 28

Fig. 29



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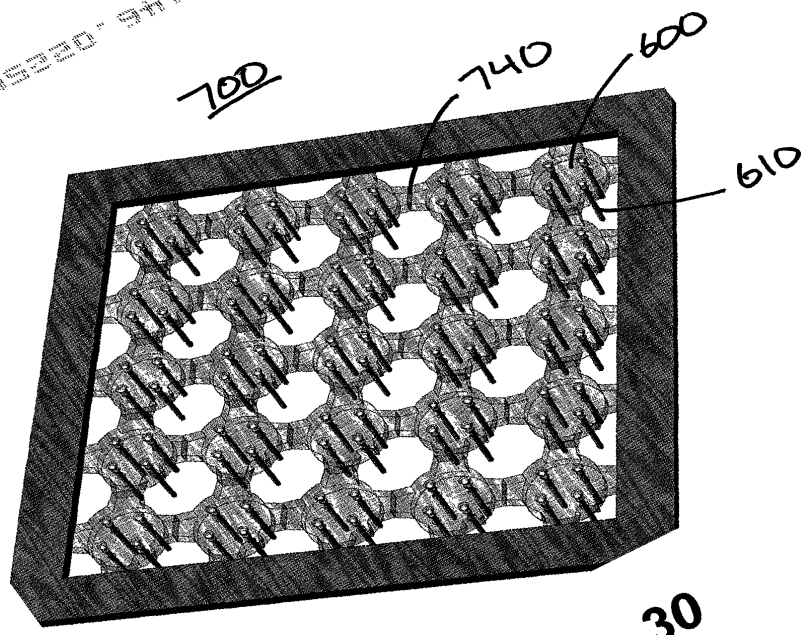
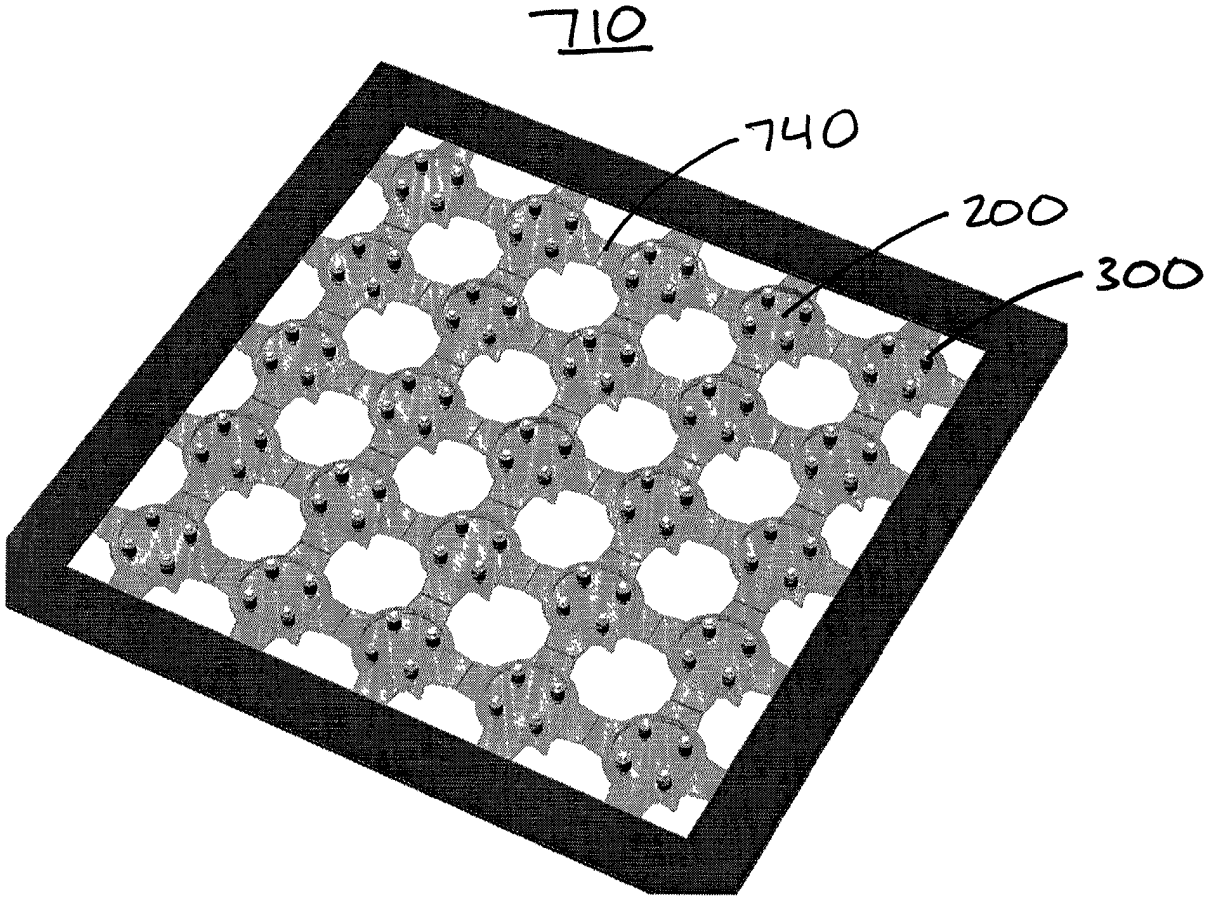


Fig. 30



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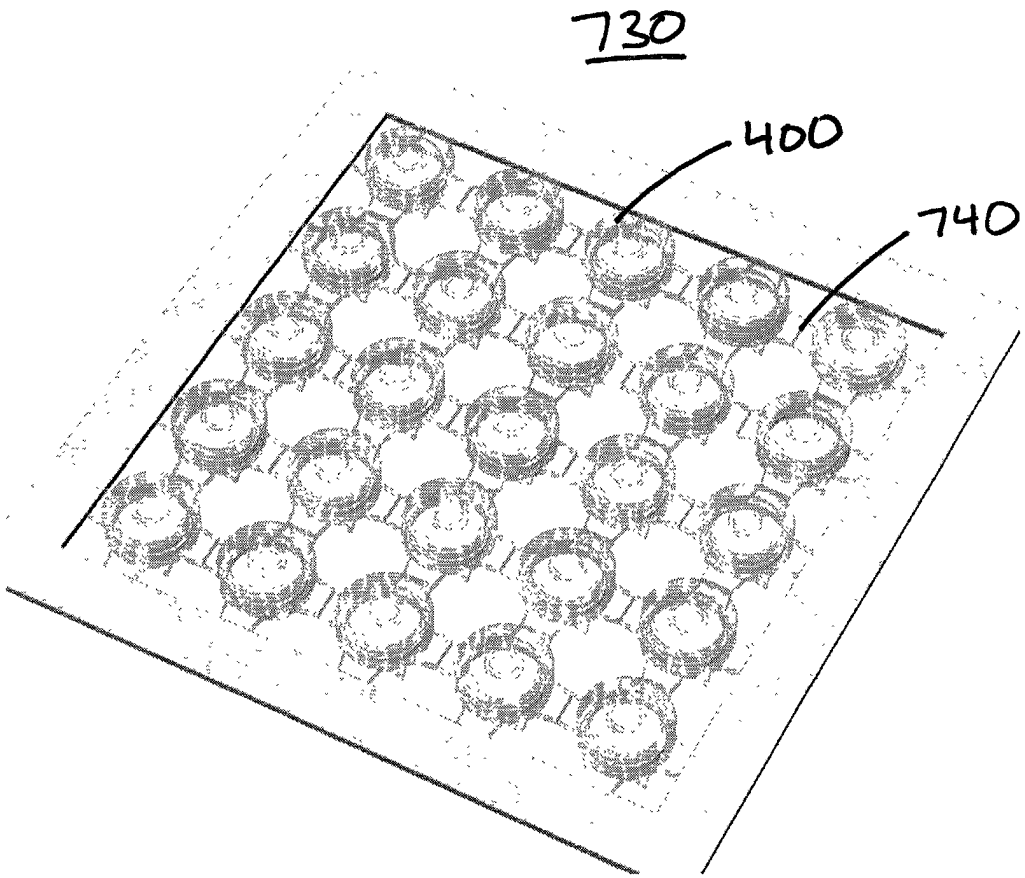

Fig. 32

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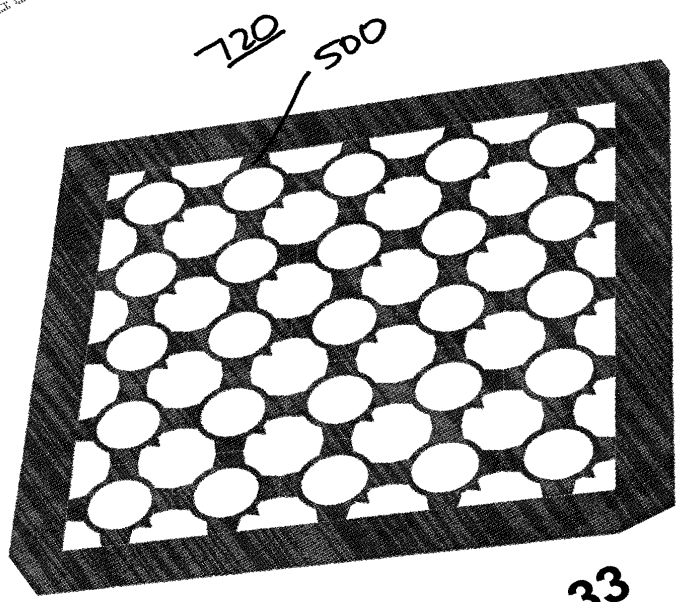

Fig. 33

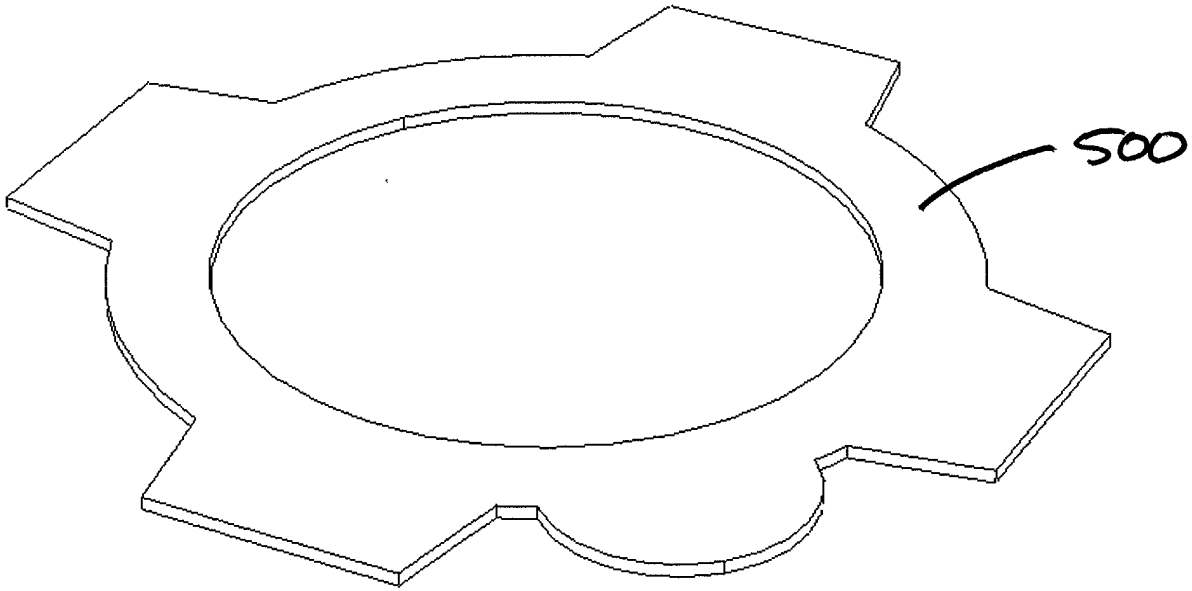

Fig. 34